

$K_p = 1.92$ ;  $P_T = 50 \text{ atm}$

$n_i$	0.5	-	-
$n_r$	-x	x	x
$n_{eq}$	0.5-x	x	x
$X_A$	$\frac{0.5-x}{0.5+x}$	$\frac{x}{0.5+x}$	$\frac{x}{0.5+x}$

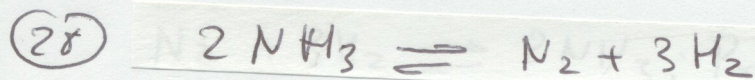
$\Rightarrow n_T = 0.5 + x$

$K_p = \frac{P_{Cl_2} \cdot P_{Cl_2}}{P_{Cl_2}}$

$1.92 = \frac{\left(\frac{x}{0.5+x} \cdot 50\right) \cdot \left(\frac{x}{0.5+x} \cdot 50\right)}{\frac{0.5-x}{0.5+x} \cdot 50}$ ;  $1.92 = \frac{50 \cdot x^2}{(0.5-x)(0.5+x)} \Rightarrow x = 0.096$

$\alpha = \frac{x}{0.5}$ ;  $\alpha = \frac{0.096}{0.5} = 0.19 \Rightarrow 19\%$

$P_{Cl_2} = X_{Cl_2} \cdot 50$ ;  $P_{Cl_2} = \frac{0.096}{0.596} \cdot 50 = 8 \text{ atm}$



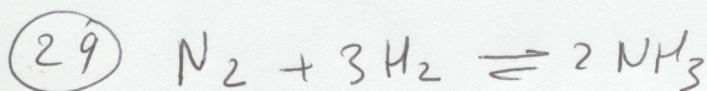
$P = 710 \text{ mm Hg} = 0.93 \text{ atm}$

$n_i$	4	-	-
$n_{eq}$	4-2x	x	3x
$n_{eq}$	2.4	0.8	2.4

$\Rightarrow n_T = 5.6$

$X_{eq}$	$\frac{2.4}{5.6} = 0.43$	$\frac{0.8}{5.6} = 0.14$	$\frac{2.4}{5.6} = 0.43$
$P_{eq}$	$0.43 \cdot 0.93 = 0.4$	$0.14 \cdot 0.93 = 0.13$	$0.43 \cdot 0.93 = 0.4$

$K_p = \frac{P_{N_2} \cdot P_{H_2}^3}{P_{NH_3}^2} = \frac{0.13 \cdot 0.4^3}{0.4^2} = 0.021$



$P_T = 200 \text{ atm}$

$n_i$	2	4	-
$n_{eq}$	2-x	4-3x	2x
$n_{eq}$	1	1	2

$\Rightarrow n_T = 4$

$2-x = 1 \rightarrow 50\% \text{ de } 2$ ;  $x = 1$

b)  $K_p = \frac{P_{NH_3}^2}{P_{N_2} \cdot P_{H_2}^3} = \frac{100^2}{50 \cdot 50^3} = 1.6 \cdot 10^{-3}$

$P_{NH_3} = X_{NH_3} \cdot P_T = \frac{2}{4} \cdot 200 = 100 \text{ atm}$

$P_{N_2} = X_{N_2} \cdot P_T = \frac{1}{4} \cdot 100 = 25 \text{ atm}$

$P_{H_2} = X_{H_2} \cdot P_T = \frac{1}{4} \cdot 100 = 25 \text{ atm}$